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REMARKS

In the Office Action, the Examiner noted that claims 1-21 are pending in the application, claims 11-13, 15, and 21 are objected to, and claims 1-10, 14, and 16-20 stand rejected. By this response claim 1 is amended to correct a formality error pointed out by the Examiner and not in response to prior art. All other claims continue un-amended.

In view of the following discussion and the telephone conversation with the Examiner, of April 18, 2003, in which the Examiner conceded that the ADM 16/4 of the Walter reference does not anticipate the synchronization distribution unit of the Applicant's invention, and as such the reference of Walter does not anticipate the Applicant's invention, the Applicant respectfully submits that none of these claims now pending in the application are anticipated under the provisions of 35 U.S.C. § 102 or obvious under the provisions of 35 U.S.C. § 103. Thus the Applicant believes that all of these claims are now in allowable form.

Objections

The Examiner objected to claims 11-13, 15, and 21 as being dependent upon a rejected base claim.

The Applicant would like to thank the Examiner for pointing out allowable subject matter, but the Applicant respectfully submits that in view of the following discussion, none of the base claims now pending in the application are anticipated under the provisions of 35 U.S.C. § 102 or obvious under the provisions of 35 U.S.C. § 103. As such and for at least the reasons set forth herein, the Applicant also submits that the claims dependent upon the base claims are also not anticipated under the provisions of 35 U.S.C. § 102 or obvious under the provisions of 35 U.S.C. § 103 and are patentable thereunder.

As such, the Applicant respectfully submits that the basis for the Examiner's objections to Applicant's claims 11-13, 15, and 21 has been removed. Therefore, the Applicant respectfully requests that the objections to claims 11-13, 15, and 21 be withdrawn.

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Rejections

A. 35 U.S.C. § 102

The Examiner rejected claims 1 and 16 under 35 U.S.C. § 102(b) as being anticipated by Walter et al. (hereinafter Walter), U.S. Patent 6,418,151. Subsequently, in a telephone conversation of April 18, 2003, the Examiner conceded that the ADM 16/4 of the Walter reference does not anticipate the synchronization distribution unit of the Applicant's invention, and as such the reference of Walter does not anticipate the Applicant's invention. As such, the rejection is respectfully traversed.

In any event, the Applicant herein provided further discussion as to why the Walter reference does not anticipate the Applicant's invention.

Claims 1 and 16

The Examiner alleges that regarding claims 1 and 16, referring to figures 2 and 4, Walter teaches an apparatus for providing synchronization signals to a telecommunications network comprising: a central synchronization management unit (i.e., PRC 1 (GPS), CSE-3, SAM-CS) (Fig. 4) for distributing synchronization signals (col. 1, line 10-52), and a synchronization distribution unit (i.e., ADM 16/4)) (Fig. 4) connected to receive synchronization signals from the central synchronization management unit and to distribute the signals to at least one network element (i.e., ADM 155, LXC16/1, 1SM2DSS) (col. 2, line 20-67 and col. 3, line 1-67). The Applicant respectfully disagrees.

ADM 16/4 as pointed out by the Examiner is depicted in Fig. 4 of Walter. However, Walter nowhere in the disclosure describes the function of the ADM 16/4 alleged by the Examiner to anticipate the synchronization distribution unit of the Applicant's invention. The ADM 16/4 of Walter could drop the clock signal and never distribute it as taught and claimed by the Applicant's invention. The ADM 16/4 of Walter could add a different clock signal to the network in contrast to the Applicant's invention. There exist endless possibilities as to the function of

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the ADM 16/4 in the invention of Walter. However, no description of the ADM 16/4 was offered in the disclosure of Walter. As such and for at least those reasons, the Examiner conceded that the ADM 16/4 of the Walter reference does not anticipate the synchronization distribution unit of the Applicant's invention, and as such the reference of Walter does not anticipate the Applicant's invention.

In addition, "Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim" (Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1983)) (emphasis added).

The Walter reference fails to teach or disclose at least the invention as recited in the Applicant's claim 1 as follows:

"An apparatus for providing synchronization signals to a telecommunications network comprising:
a central synchronization management unit for distributing synchronization signals; and
a synchronization distribution unit connected to receive synchronization signals from the central synchronization management unit and to distribute the signals to at least one network element." (emphasis added).

The Applicant's Invention is directed to several embodiments of synchronization systems, wherein synchronization and management signals are carried over links between a single central synchronizing management unit and each synchronizing distribution unit, and between each synchronizing distribution unit and each network element, wherein each synchronizing distribution unit only receives signals from the single central synchronizing management unit. (See Applicant's Specification, page 4, lines 21-24). The Applicant further teaches "The distributed architecture of the present invention, an architecture that distributes synchronization and management signals to synchronization distribution units which, in turn, distribute signals to network elements, reduces

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the number of links required for the distribution of these signals. That is, each synchronization distribution unit acts as a concentrator, preferably communicating with a plurality of network elements and thereby limiting the number of direct links to a central synchronization management unit." (See Applicant's Specification, page 6, lines 23-29). It is clear from the Applicant's disclosure that the Applicant's invention is directed, at least in part to limiting the number of direct links to a central synchronization management unit. In the Applicant's invention, a single central synchronization management unit receives and distributes all of the clock signals. In support of this aspect, the Applicant discloses:

"A central synchronization management unit 200 is connected to receive synchronization, or clock signals from a plurality of clock sources, such as a global positioning system (GPS) receiver 202 and a craft interface terminal (CIT) 204. The GPS receiver is connected to receive its clock from an antenna 206. The central synchronization management unit 200 selects one of the clock sources 202 or 204 as a primary source and the other as a secondary source." (See Applicant's Specification, page 8, line 27 through page 9, line 2).

"The central synchronization management unit 200 provides the synchronization distribution unit 210 with synchronization and management information through link 208." (See Applicant's Specification, page 9, lines 6-8).

"In general, the central synchronization management unit 200 provides interfaces for highly stable low error rate clock input signals such as GPS, Stratum 1 clocks, or other such inputs and provides, for example, Stratum 11 level output clock signals." (See Applicant's Specification, page 10, lines 1-3).

The Applicant's claims must be taken in light of the Specification. As such, the Applicant's invention of claim 1 is directed, at least in part, to a single central synchronization management unit for distributing synchronization signals of various clock inputs.

There is absolutely no teaching or disclosure in Walter for "a central synchronization management unit for distributing synchronization signals" and "a

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synchronization distribution unit connected to receive synchronization signals from the central synchronization management unit and to distribute the signals to at least one network element" as claimed in at least the Applicant's claim 1. The Examiner alleges that, in Walter, the PRC1, CSE-3, and/or the SAM-CS of Fig. 4 teaches the central synchronization management unit of the Applicant's invention and that the ADM 16/4 of Fig. 4 teaches the synchronization distribution unit of the Applicant's invention. The Applicant respectfully disagrees.

The invention of Walter teaches and is directed to the automatic switching between clock sources in synchronous networks by using Synchronous Status Message transmitted over the network and a control circuit positioned between the SASE and a network element. (See Walter, Abstract). Walter discloses:

"According to FIGS. 2 and 4 the clock generator PRC1, which functions as master, feeds the primary clock into the network, with all SDH network elements SDH Ne.sub.n being fed the network clock by this clock source PRC1. The signal path of the clock supply runs, starting at the clock source PRC1, via the priority-1-input of an SASE1 (Stand Alone Synchronization Equipment) and via T3 to the SDH network element SDH-Ne1. This latter feeds all STM-n outputs with this clock." (See Walter, col. 2, lines 21-29).

In Walter, the network elements distribute the clock signals from one to another. This is in direct contrast to the Applicant's claimed invention wherein the Applicant claims and teaches "a synchronization distribution unit connected to receive synchronization signals from the central synchronization management unit and to distribute the signals to at least one network element." Walter does not teach, suggest or disclose the synchronization unit of the Applicant's invention, wherein the synchronization unit receives synchronization signals and messages from the central synchronization management unit and distributes the signals and messages to each of the network elements as taught and claimed in the Applicant's invention.

In further contrast to the Applicant's invention, Walter teaches:

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"If now, due to an interference with the operation, the clock source PRC1 drops out, the priority-1 signal of equipment SASE1 is absent as well. The priority-2 signal of equipment SASE1 is not extant at this time, because the network element SDH-NE2, as well as the network element SAH-NE4, transit the information SSM=DNU (Do Not Use for Timing). However the signal at T3 of the network element SDH-NE1 does not drop out, because the equipment SASE1 passes to the "holdover" state. Inasmuch as the network element SDH-NE1 cannot recognize from the T3 sine-signal which clock quality it has, the information SSM=G.812T is communicated to this network element SDH-NE1 via the SSM control line. Thereupon the network element SDH-NE1 enters this quality step into the SSM-byte of all STM-n signals, where n stands for 1, 2, 4, 16, 64 according to Recommendation ITU-T G.707. By this all network elements connected to the network element SDH-NE1 learn this change of the clock quality and can, in turn, react thereto. The network element SDH-NE3 disconnects thereupon the T4 clock output, since it receives this clock quality on the working route W as well as on the protection route PO.

The equipment SASE2 now switches over to the priority-2 clock input and sends further a clock of the quality step SSM=G.811 via T3 to the network element SDH-NE3. Via the control line SSM the clock quality SSM=G.811 is signaled further on. The network element SDH-NE3 issues on all outgoing STM-n signals the clock quality SSM=G.811. Thereupon all other network elements SDH-NE.sub.n become synchronized to the new clock issuer, i.e. to the network element SDH-NE3. The latter is now supplied with the replacement primary clock PRC2 by the clock source PRC2 via equipment SASE2. The network element SDH-NE2 now receives via the protection route P1, as well as also via the working route P2, clock signals of SSM=G.811 quality." (See Walter, col. 2, line 61 through col. 3, line 7).

In the invention of Walter, two clock signals are configured as a master and a slave and the clock signals originate and are distributed from alternate sources. If a clock signal from a first Stand Alone Synchronization Equipment fails, a clock signal from a second Stand Alone Synchronization Equipment is used as the synchronization signal for the network. These two different clock signals are distributed throughout the network from two different sources.

In contrast, the Applicant's invention teaches that all of the clock signals in a network are received and distributed by a central synchronization management unit of the Applicant's invention. There is absolutely no teaching in Walter for a

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central synchronization management unit as taught and claimed in the Applicant's invention. In fact, it would be impossible for the invention of Walter to perform the function of the Applicant's invention at least with respect to a central synchronization management unit for receiving various clock signals, choosing a first clock signal as a primary source and choosing a second clock signal as a secondary source. In support of the claimed invention, the Applicant discloses:

"The central synchronization management unit 200 selects one of the clock sources 202 or 204 as a primary source and the other as a secondary source. Should the primary source fail, the central synchronization management unit switches to the secondary source to provide clock signals to the remainder of the system 201." (See Applicant's Specification, page 8 line 30 through page 9, line 4).

In the Applicant's invention, there is no need to inform a second unit that a first unit's clock failed, such that upon a failure of a first clock, the second unit may distribute a second clock signal throughout the network as taught in claimed In Walter. Instead, in the Applicant's invention a single central synchronization management unit senses a failure in a primary clock and switches to a secondary clock.

As such, at least because the teachings of Walter do not teach, suggest or disclose either a central synchronization management unit or a synchronization distribution unit as taught in claimed in at least the Applicant's claim 1, the Applicant respectfully submits that the teachings and disclosure of Walter do not anticipate the Applicant's invention, at least with respect to claim 1.

Therefore, the Applicant submits that claim 1 is not anticipated by the teachings of Walter and, as such, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

Likewise, independent claim 16 recites similar relevant features as recited in claim 1. As such, the Applicant submits that independent claim 16 is also not anticipated by the teachings of Walter and also fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

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Furthermore, dependent claims 2-10, 14 and 16-20 depend either directly or indirectly from claims 1 and 16 and recite additional features therefor. As such and for at least the reasons set forth herein, the Applicant submits that dependent claims 2-10, 14 and 16-20 are also not anticipated by the teachings of Walter. Therefore the Applicant submits that dependent claims 2-10, 14 and 16-20 also fully satisfy the requirements of 35 U.S.C. § 102 and are patentable thereunder.

The Applicant reserves the right to establish the patentability of each of the rejected claims individually subsequently in prosecution.

B. 35 U.S.C. § 103

The Examiner rejected claims 2-4 under 35 U.S.C. § 103(a) as being unpatentable over Walter in view of Moulton et al. (hereinafter Moulton), U.S. Patent 6,487,262. The rejection is respectfully traversed.

Claims 2-4 depend either directly or indirectly from the Applicant's independent claim 1 and recite additional limitations thereof. The Examiner applied Walter to claims 2-4 as applied above for the rejections of claim 1. At least because the teachings of Walter do not teach, suggest or disclose the Applicant's invention with respect to claim 1 as mentioned above, the Applicant respectfully submits that the teachings of Walter also do not teach suggest or disclose the Applicant's claims 2-4.

In addition, the teachings of Moulton fail to bridge the substantial gap between the Applicant's invention and the teachings of Walter. Moulton teaches a method of network synchronization wherein data is transmitted from a broadband network unit to devices on a residence downstream carrier frequency. (See Abstract). There is absolutely no teaching in Moulton for "a central synchronization management unit for distributing synchronization signals" and "a synchronization distribution unit connected to receive synchronization signals from the central synchronization management unit and to distribute the signals to

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at least one network element" as claimed in at least the Applicant's claim 1. As such, at least because Walter and Moulton, alone or in any allowable combination, do not teach, suggest or disclose the Applicant's invention at least with respect to claim 1, the Applicant respectfully submits that the teachings of Walter and Moulton, alone or in any allowable combination, also do not teach, suggest or disclose the Applicant's claims 2-4.

Therefore, the Applicant submits that claims 2-4, as they now stand, fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder.

C. 35 U.S.C. § 103

The Examiner rejected claims 5-10, 14 and 17-20 under 35 U.S.C. § 103(a) as being unpatentable over Walter in view of Moulton, and further in view of Ojaniemi, U.S. Patent 5,727,034. The rejection is respectfully traversed.

Claims 5-10, 14 and 17-20 depend either directly or indirectly from the Applicant's Independent claims 1 and 16 and recite additional limitations thereof. The Examiner applied Walter to claims 5-10, 14 and 17-20 as applied above for the rejections of claims 1 and 16. At least because the teachings of Walter do not teach, suggest or disclose the Applicant's invention with respect to claim 1 as mentioned above, the Applicant respectfully submits that the teachings of Walter also do not teach suggest or disclose the Applicant's claims 5-10, 14 and 17-20.

In addition, the teachings of Moulton fail to bridge the substantial gap between the Applicant's invention and the teachings of Walter. Moulton teaches a method of network synchronization wherein data is transmitted from a broadband network unit to devices on a residence downstream carrier frequency. (See Abstract). There is absolutely no teaching in Moulton for "a central synchronization management unit for distributing synchronization signals" and "a synchronization distribution unit connected to receive synchronization signals from the central synchronization management unit and to distribute the signals to at least one network element" as claimed in at least the Applicant's claims 1 and 16. As such, at least because Walter and Moulton, alone or in any allowable

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combination, do not teach, suggest or disclose the Applicant's invention at least with respect to claims 1 and 16, the Applicant respectfully submits that the teachings of Walter and Moulton, alone or in any allowable combination, also do not teach, suggest or disclose the Applicant's claims 5-10, 14 and 17-20.

Even further, the Applicant submits that the teachings of Ojanleml fail to bridge the substantial gap between the Applicant's invention and the teachings of Walter and Moulton. Ojanleml teaches a communications system utilizing an external signal of high accuracy to maintain a good degree of accuracy of synchronization of base sites. (See Abstract). There is absolutely no teaching in Ojanleml for "a central synchronization management unit for distributing synchronization signals" and "a synchronization distribution unit connected to receive synchronization signals from the central synchronization management unit and to distribute the signals to at least one network element" as claimed in at least the Applicant's claims 1 and 16. As such, at least because Walter, Moulton and Ojanleml, alone or in any allowable combination, do not teach, suggest or disclose the Applicant's invention at least with respect to claims 1 and 16, the Applicant respectfully submits that the teachings of Walter, Moulton and Ojanleml, alone or in any allowable combination, also do not teach, suggest or disclose the Applicant's claims 5-10, 14 and 17-20.

Therefore, the Applicant submits that claims 5-10, 14 and 17-20, as they now stand, fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder.

Applicant's Note

The Applicant would like to thank the Examiner for his suggestions regarding the allowability of claims 11-13, 15 and 21, but at this time the Applicant believes all of the claims in this application to be allowable. The Applicant reserves the right to individually establish the patentability of each, independent and dependent claim in a subsequent response.

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Conclusion

Thus the Applicant submits that none of the claims, presently in the application, are anticipated under the provisions of 35 U.S.C. § 102 or obvious under the provisions of 35 U.S.C. § 103. Consequently, the Applicant believes that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Jorge Tony Villabon, Esq. or Eamon J. Wall, Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,



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Dated: 4/27/03

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